

**AMENDMENTS TO THE CLAIMS**

1. (Currently amended) A method for automatic end-to-end path provisioning for an optical network by a network management system, comprising:

obtaining path parameters including scheduled load and availability information for each network element of the network;

automatically performing discovery of paths including determining connection possibilities based upon the path parameters; and

automatically provisioning an end-to-end STS-n path based on the paths resulting from the discovery.

2. (Currently amended) The method for automatic end-to-end path provisioning according to claim 1, wherein the path parameters ~~includes~~ include at least one additional parameter selected from the group consisting of bandwidth size, start network element, end network element, add facility, drop facility, link information, cross connection information, equipment information, ~~and facilities information, and scheduled load and availability information.~~ information.

3. (Original) The method for automatic end-to-end path provisioning according to claim 1, wherein the automatic discovery includes building a list of all possible connections for the end-to-end path.

4. (Original) The method for automatic end-to-end path provisioning according to claim 1, wherein the automatic provisioning includes selecting a least cost path from the discovered paths and setting the least-cost path as the working path.

5. (Original) The method for automatic end-to-end path provisioning according to claim 4, wherein the least cost path is the shortest path based on the number of network element hops.

6. (Original) The method for automatic end-to-end path provisioning according to claim 1, wherein the automatic provisioning includes selecting a second least cost path from the discovered paths and setting the second least cost path as the protection path.

7. (Original) The method for automatic end-to-end path provisioning according to claim 1, wherein, the network has UPSR protection scheme, automatically provisioning facility fault protection (FFP) and cross connections.

8. (Currently amended) A system for automatic end-to-end path provisioning for an optical network by a network management system, comprising:

an input device for obtaining path parameters including scheduled load and availability information for each network element of the network; and

a processor for automatically performing discovery of paths including determine connection possibilities based upon the path parameters and for automatically provisioning an end-to-end STS-n path based on the paths resulting from the discovery.

9. (Currently amended) The system for automatic end-to-end path provisioning according to claim 8, wherein the path parameters ~~includes~~include at least one additional parameter selected from the group consisting of bandwidth size, start network element, end network element, add facility, drop facility, link information, cross connection information, equipment information, ~~and facilities~~ information, and scheduled load and availability information.

10. (Original) The system for automatic end-to-end path provisioning according to claim 8, wherein the processor automatic discovery includes building a list of all possible connections for the end-to-end path.

11. (Currently amended) The system for automatic end-to-end path provisioning according to claim 8, wherein the processor performs ~~automatically~~automatic discovery by selecting a least cost path from the discovered paths and setting the least-cost path as the working path.

12. (Original) The system for automatic end-to-end path provisioning according to claim 11, wherein the least cost path is the shortest path based on the number of network element hops.

13. (Original) The system for automatic end-to-end path provisioning according to claim 8, wherein the processor performs automatic provisioning by selecting a second least cost path from the discovered paths and setting the second least cost path as the protection path.

14. (Currently amended) The system for automatic end-to-end path provisioning according to claim 8, wherein, the network has UPSR protection scheme, the processor being configured to automatically perform facility fault protection (FFP) provisioning and cross ~~connections~~ connection provisioning.

15. (New) The method for automatic end-to-end provisioning according to claim 1, wherein said automatic provisioning performs dynamic allocation of bandwidth based on one or more factors selected from the group consisting of traffic type, desired quality of service, and the scheduled load and availability information.

16. (New) The method for automatic end-to-end path provisioning according to claim 1, said obtaining path parameters step including:

issuing an inventory request to the network elements of the optical network; and  
receiving inventory responses from the network elements;

the method further comprising:

comparing inventory responses with an inventory database;  
determining if any of the network elements has not yet been provisioned;  
retrieving a default template corresponding to the network element(s) not yet provisioned; and

automatically provisioning the network element(s) not yet provisioned utilizing parameter values defined by the retrieved default template.

17. (New) The method for automatic end-to-end path provisioning according to claim 16, wherein the default template includes a facility fault protection template.
18. (New) The system for automatic end-to-end path provisioning according to claim 8, said processor performing dynamic allocation of bandwidth based on one or more factors selected from the group consisting of traffic type, desired quality of service, and the scheduled load and availability information.
19. (New) The system for automatic end-to-end path provisioning according to claim 8,
  - said processor obtaining path parameters by issuing an inventory request to the network elements of the optical network and receiving inventory responses from the network elements;
  - said processor comparing inventory responses with an inventory database and determining if any of the network elements has not yet been provisioned;
  - said processor retrieving a default template corresponding to the network element(s) not yet provisioned; and
  - said processor automatically provisioning the network element(s) not yet provisioned utilizing parameter values defined by the retrieved default template.
20. (New) The system for automatic end-to-end path provisioning according to claim 19, wherein the default template includes a facility fault protection template.